

# Rosemount™ 4600 Oil and Gas Panel Pressure Transmitter

HART Revision 7



# Legendary Rosemount performance, customized for your panel applications

## A compact, lightweight, all-welded stainless steel design

You asked for it and we've delivered — the stability, performance, and reliability of Rosemount products are now available in a compact transmitter for your space and weight constrained panel applications. The entire transmitter weighs less than 2.1 lb. (0.95 kg) and the all-welded, hermetic enclosure maximizes reliability by minimizing environmental effects, such as salt spray and humidity, on the electronics and sensor.

## Up to 40:1 rangeability for increased flexibility and reduced inventories

Emerson understands that oil and gas well pressures are sometimes unpredictable, and that's why we've incorporated 40:1 rangeability into the Rosemount 4600. Not only does 40:1 rangeability allow you incredible flexibility, it also lowers your transmitter inventories by allowing you to measure pressure ranges from 4 psi to 20,000 psi with only four transmitter ranges.

## 4-20 mA HART® capabilities and 0.25 percent of calibrated span reference accuracy

The HART protocol enables quick and easy reranging, calibration and troubleshooting for nearly effortless field adjustments. As always, reference accuracy is specified as a percent of calibrated span, not as a percent of full scale, so you're guaranteed 0.25 percent reference accuracy whether you're measuring 20,000 psi or 20 psi.

## Access information when you need it with asset tags

Newly shipped devices include a unique QR code asset tag that enables you to access serialized information directly from the device. With this capability, you can:

- Access device drawings, diagrams, technical documentation, and troubleshooting information in your MyEmerson account
- Improve mean time to repair and maintain efficiency
- Ensure confidence that you have located the correct device
- Eliminate the time-consuming process of locating and transcribing nameplates to view asset information

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## Ordering information



The Rosemount 4600 Oil and Gas Panel Pressure Transmitter is a compact, reliable transmitter designed to meet your panel-mount monitoring needs. The transmitter continues the Emerson tradition of delivering superior performance, industry leading reliability, and exceptional value.

- A compact, lightweight, all-welded stainless steel design
- Up to 40:1 rangeability for increased flexibility and reduced inventories
- 4–20 mA HART® capabilities and 0.25 percent of calibrated span reference accuracy

[CONFIGURE >](#)

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### Online product configurator

Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our [website](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

### Specifications and options

See the Specifications and options section for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See the Material selection section for more information.

### Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in [Figure 1](#).

**Figure 1: Model Code Example**

3051C D 2 X 2 2 M5 B4

1            2

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

### Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

## Required model components

### Model

Code	Description
4600	Oil and gas panel pressure transmitter

### Measurement type

Code	Description	
G	Gauge	★
A	Absolute	★

### Pressure range

Code	Description	
1	0–4 to 0–30 psi	★
2	0–20 to 0–150 psi	★
3	0–40 to 0–800 psi	★
4	0–125 to 0–5,000 psi	★
5	0–2000 to 0–10,000 psi	★
6	0–4000 to 0–20,000 psi (available only with H11)	★

### Isolating diaphragm/process connection materials

Materials of Construction comply with recommendations per NACE® MR0175/ISO 15156 for sour oilfield production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

Code	Description	
2	316L SST	★
3	Alloy C-276	★

### Process connection style

Code	Description	
E09 <sup>(1)</sup>	¼–18 NPT female	★
E11 <sup>(2)</sup>	½–14 NPT female	★
H11 <sup>(3)</sup>	Coned and threaded, compatible with autoclave type F–250–C	★

(1) Not available with Pressure Range 6.

(2) Not available with Pressure Range 5 or 6.

(3) Only available with Pressure Range 5 or 6.

## Output

Code	Description	
A	4–20 mA with digital signal based on HART protocol	★

## Electrical connection

Code	Description	
5A	½–14 NPT male with 72-in. flying lead	★
5B	½–14 NPT male with 50 ft. flying lead	

## Transmitter version

Code	Description	
RK	HART Rev 7 transmitter	

## Additional options

### Extended product warranty

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

### Software configuration

Code	Description	
C1	Custom software configuration (CDS required with order)	★

### Alarm limits

Code	Description	
C4	NAMUR alarm and saturation levels, high alarm	★
CN	NAMUR alarm and saturation levels, low alarm	
C6	Custom alarm and saturation signal levels, high alarm	
C7	Custom alarm and saturation signal levels, low alarm	★
CT	Low alarm (standard Rosemount alarm and saturation levels)	

### External ground screw assembly

Code	Description	
D4	External ground screw assembly	★

### Product certifications

Code	Description	
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
N1	ATEX Type n	★
K1	ATEX Flameproof, Intrinsic Safety, Type n (combination of E1, I1, and N1)	★
ND	ATEX Dust Ignition-Proof	★
E5	FM Approval Explosionproof	★
I5	FM Approval Intrinsic Safety, Non-incendive	★
K5	FM Approval Explosionproof, Intrinsic Safety, Non-incendive (combination of E5 and I5)	★
E6	CSA Explosionproof, Division 2	
I6	CSA Intrinsic Safety	★
K6	CSA Explosionproof, Intrinsic Safety, Division 2 (combination of E6 and I6)	
E7	IECEx Flameproof, Dust Ignition-proof	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
KM	Technical Regulation Customs Union (EAC) Flameproof and Intrinsic Safety	★
KA	ATEX/CSA Flameproof and Intrinsic Safety (combination of E1, I1, E6, and I6)	
KB	FM Approval and CSA Explosionproof and Intrinsic Safety (combination of E5, E6, I5, and I6)	
KC	FM Approval and ATEX Explosionproof and Intrinsic Safety (combination of E5, E1, I5, and I1)	★

### Calibration certifications

Code	Description	
Q4	Calibration Data Certificate consistent with ISO 104742.1 or EN 10204 2.1	★

### Material traceability certification

Code	Description	
Q8	Material Traceability Certification per EN 10204 3.1B	★

**Positive material identification (PMI)**

Code	Description	
Q76	PMI verification and certificate	★

**Transient protection**

Code	Description	
T1	Transient protection	★

**Cold temperature**

Code	Description	
BR5	-58 °F (-50 °C) cold temperature operation	★

**Improved performance**

Code	Description	
P8 <sup>(1)</sup>	Improved performance to 0.075% of span	★

(1) Only available on Pressure ranges 2 and 3.

# Specifications

## Performance specifications

For zero-based spans, reference conditions, silicone oil fill, SST materials, ½-in.–14 NPT process connections, digital trim values set to equal range points. Does not include any error due to the effects of sealed gauge.

### Conformance to specification ( $\pm 3$ Sigma)

Technology leadership, advanced manufacturing techniques and statistical process control ensure specification conformance to at least  $\pm 3$  sigma.

### Reference accuracy

Includes the effects of terminal based linearity, hysteresis, and repeatability.

Range 1:  $\pm 0.25$  percent of calibrated span from 1:1 to 7.5:1 rangedown

Range 2:  $\pm 0.25$  percent of calibrated span from 1:1 to 7.5:1 rangedown

Range 3:  $\pm 0.25$  percent of calibrated span from 1:1 to 20:1 rangedown

Range 4:  $\pm 0.25$  percent of calibrated span from 1:1 to 40:1 rangedown

Range 5:  $\pm 0.25$  percent of calibrated span from 1:1 to 5:1 rangedown

Range 6:  $\pm 0.25$  percent of calibrated span from 1:1 to 5:1 rangedown

### P8 improved performance

All ranges:  $\pm 0.075$  percent of calibrated span from 1:1 to 2:1 rangedown (only available on ranges 2-3).

### Long term stability

Range 1:  $\pm 0.25$  percent of URL for 1 year

Range 2-4:  $\pm 0.25$  percent of URL for 3 years

With High Performance option P8,  $\pm 0.25$  percent of URL for 5 years

### Vibration effect

Less than  $\pm 0.1$  percent of URL when tested per the requirements of IEC62398-3 (1999) field or pipeline with high vibration level (10–60 Hz 0.21 mm displacement peak amplitude/60–2000 Hz 3g).

### Electromagnetic Compatibility (EMC)

Meets all industrial environment requirements of EN61326. Maximum deviation  $< 1$  percent span during EMC disturbance.

### Note

During surge event, device may exceed maximum EMC deviation limit or reset; however, device will self-recover and return to normal operation within specified start-up time.

### Transient protection (option T1)

- Meets IEEE C62.41, Category B
  - 6 kV crest (0.5  $\mu$ s - 100 kHz)
  - 3 kA crest (8  $\times$  20 microseconds)
  - 6 kV crest (1.2  $\times$  50 microseconds)
- Meets IEEE C37.90.1, Surge Withstand Capability
  - SWC 2.5 kV crest, 1.25 MHz wave form
- General specifications
  - Response time:  $< 1$  nanosecond
  - Peak surge current: 5,000 amps to housing



- Peak transient voltage: 100 Vdc
- Loop impedance: < 25 ohms
- Applicable standards: IEC61000-4-4, IEC61000-4-5

**Note**

Calibrations at 68 °F (20 °C) per ASME Z210.1 (ANSI).

**Range and sensor limits**

**Table 1: Transmitter Range Limits**

Range	Lower (LRL) <sup>(1)</sup>	Upper (URL)	Minimum span
1	0 psi (0 bar)	30 psi (2.1 bar)	4 psi (0.3 bar)
2		150 psi (10.3 bar)	20 psi (1.4 bar)
3		800 psi (55.1 bar)	40 psi (2.8 bar)
4		5,000 psi (344.7 bar)	125 psi (8.6 bar)
5		10,000 psi (689.5 bar)	2000 psi (137.9 bar)
6		20,000 psi (1379 bar)	4000 psi (275.8 bar)

(1) 220 °F (104 °C) limit in vacuum service; 130 °F (54 °C) for pressures below 0.5 psia.

## Functional specifications

**Dynamic performance**

The response time is ≤ 200 ms, at 24 °C and with damping set to minimum.

**Ambient temperature effect per 100 °F (56 °C)**

±0.03 percent URL + 1.0 percent span from 1:1 to maximum rangedown.

**Service**

Liquid, gas, and vapor applications

**4–20 mA (output code A)**

**Zero and span adjustment**

Zero and span values can be set anywhere within the range.

Span must be greater than or equal to the minimum span.

**Output**

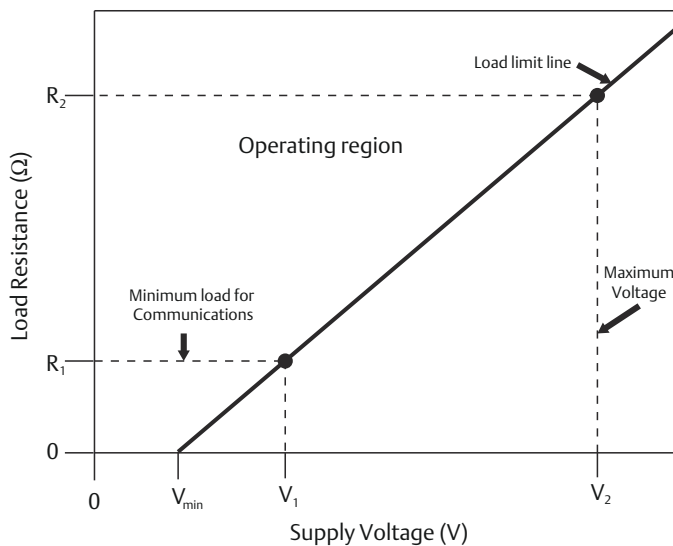
Digital process variable superimposed on 4–20 mA signal, available to any host that conforms to the HART protocol.

**Power supply**

External power supply required. Standard transmitter (4–20 mA) operates on 10 to 42.4 Vdc with no load.

**Load limitations**

Maximum loop resistance is determined by the voltage level of the external power supply, as described by:



**Table 2: Load Resistance and Voltage Supply Limits**

Parameter	Limits
R <sub>1</sub> (Ω)	250
R <sub>2</sub> (Ω)	1408
V <sub>min</sub> (V)	10
V <sub>1</sub> (V)	15.75
V <sub>2</sub> (V)	42.4

HART communication requires a minimum loop resistance of 250 ohms.

- Maximum loop resistance = 1408 ohms (power supply voltage – 10 Vdc).
- Communication requires a minimum loop resistance of 250 ohms.

**Overpressure limits**

- Transmitters withstand the following pressure without damage:
  - Range 1: 750 psi (51.7 bar)
  - Range 2: 1,500 psi (103.4 bar)
  - Range 3: 1,600 psi (110.3 bar)
  - Range 4: 7,500 psi (517.1 bar)

- Range 5: 15,000 psi (1034 bar)
- Range 6: 24,000 psi (1655 bar)

### Burst pressure limits

Range 1 – 4: 11,016 psi (759.53 bar)

Range 5: 26,016 psi (1,793.74 bar)

Range 6: 46,092 psi (3,177.93 bar)

### Temperature limits

<b>Ambient</b> <sup>(1)</sup>	–40 to 185 °F (–40 to 85 °C)
<b>Storage</b> <sup>(1)</sup>	–50 to 230 °F (–46 to 110 °C)
<b>Process</b> <sup>(1)(2)(3)</sup>	–40 to 250 °F (–40 to 121 °C)

### Turn-on time

Performance within specifications less than 2.5 seconds after power is applied to the transmitter

### Damping

Analog output response to a step input change is user-selectable from 0 to 60 seconds for one time constant. This software damping is in addition to sensor module response time.

### Failure mode alarm

If self-diagnostics detect a sensor microprocessor failure, the analog signal is driven either high or low to alert the user. The values to which the transmitter drives its output in failure mode depend on whether it is configured to standard, NAMUR-compliant or customer levels. The values for each are as follows:

**Table 3: Alarm Configuration**

	High alarm	Low alarm
Rosemount standard	$\geq 21.75 \text{ mA}^{(1)}$	$\leq 3.75$
NAMUR <sup>(2)</sup>	$\geq 22.5 \text{ mA}$	$\leq 3.6 \text{ mA}$
Custom <sup>(3)</sup>	20.2 - 23 mA	3.4 - 3.8 mA

(1) Default configuration.

(2) Analog output levels are compliant with NAMUR Recommendation NE 43.

(3) Low alarm must be 0.1 mA less than low saturation and high alarm must be 0.1 mA greater than high saturation.

## Physical specifications

### Material selection

Emerson provides a variety of Rosemount product with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (e.g. all chemical components, temperature, pressure, flow rate, abrasives, contaminants), when specifying product, materials, options and components for the particular application. Emerson is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product, options, configuration or materials of construction selected.

(1) -58°F (-50°C) low temp rating available with BRR option code.

(2) Process temperature above 185 °F (85 °C) require de-rating ambient limits by a 1.5:1 ratio.

(3) Process temperature cannot exceed 220 °F (104 °C) in vacuum service.

**Electrical connections**

½–14 NPT male, 72-in. flying leads (polyvinyl chloride insulated #18 AWG copper wire)

**Conduit seal**

Integral conduit seal meets the requirements of NEC® 2002 section 501.5 (A), 501.5 (B) and 505.16 (B)(1). No additional conduit seal required.

**Process connections**

- ½–14 NPT female (available on Ranges 1 - 4 only)
- ¼–18 NPT female (not available on Range 6)
- Autoclave type F-250-C (Pressure relieved 9/16–18 gland thread: ¼ OD high pressure tube 60° cone: available Range 5 and 6 transmitters only.

**Process sealing**

Reliable dual process seal design meets the requirements NEC2002 section 501.5 (F)(3), 505.16 (E)(3) and API 14F/14FZ 6.8.2.2. No additional process sealing is required.

**Process-wetted parts****Process isolating diaphragms<sup>(4)</sup>**

316L SST

Alloy C-276

**Non-wetted parts****Electronics housing**

316L SST

NEMA® 4X

IP 68, IP 66

**Sensor module fill fluid**

Silicone

**Shipping weights for Rosemount 4600**

Range 2 and 4: 1.34 lb. (0.61 kg.)

Range 5 and 6: 2.03 lb. (0.92 kg.)

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(4) Materials of Construction comply with recommendations per NACE MR0175/ISO 15156 for sour oilfield production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

# Product certifications

Rev 2.14

## European Directive Information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at [Emerson.com/Rosemount](https://www.emerson.com/Rosemount).

## Ordinary Location Certification

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

## North America

### E5 US Explosionproof (XP) and Dust-Ignitionproof (DIP)

**Certificate** FM21US0079X

**Standards** FM Class 3600:2018, FM Class 3615:2018, FM Class 3616:2011, FM Class 3810:2018, ANSI/ISA 61010-1:2015, ANSI/UL 60079-0:2019, ANSI/UL 60079-1:2015, ANSI/UL 60079-26:2017, ANSI/UL 60079-31:2015, ANSI/UL 122701:2017, ANSI/UL 50E:2015

**Markings** CL I, DIV 1, GP B, C, D, T5...T4; ZONE 0/1, AEx db IIC T5...T4 Ga/Gb ( $-50\text{ °C} \leq T_a \leq 75\text{ °C}$ ); CL II, DIV 1, GP E, F, G; CL III, DIV 1, T5...T4; ZONE 21, AEx tb IIIC T135 °C Db; DUAL SEAL T5 ( $-50\text{ °C} \leq T_{\text{process}} \leq 100\text{ °C}$ ) or T4 ( $-50\text{ °C} \leq T_{\text{process}} \leq 121\text{ °C}$ ); TYPE 4X; Conduit seal not required

### Special Conditions for Safe Use (X):

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Zone 0 EPL Ga (process connection) and Zone 1 EPL Gb (all other parts of the equipment). The model code and certificate are to be consulted for details of the diaphragm material. During installation, maintenance, and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. Appropriate cable, glands need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows. Maximum ambient temperature is reduced by a ratio of 1:1.5 as process connection temperature increase beyond +85 °C.

Temperature class	Maximum surface temperature	Ambient temperature range	Process temperature range
T5	100 °C	-50 °C to +75 °C	-50 °C to +100 °C
T4	135 °C	-50 °C to +75 °C	-50 °C to +121 °C

**15 US Intrinsic Safety (IS), Increased Safety, Non Incendive (NI)**

**Certificate** FM21US0074X

**Standards** FM Class 3600:2018, Class 3610:2021, Class 3611:2021, Class 3810:2021, ANSI/UL 60079-0:2020, ANSI/UL 60079-7:2017, ANSI/UL 60079-11:2014, ANSI/UL 61010-1:2012, ANSI/UL 12.12.01:2019, ANSI/UL 50E:2015, ANSI/IEC 60529:2004 (R2011)

**Markings** IS CL I, DIV 1, GP A, B, C and D; T4  
 CL I, Zone 0, AEx ia IIC T4 Ga  
 when connected in accordance with Rosemount drawing 04620-5025  
 NI CL I, DIV 2, GP A, B, C, D; T5...T4  
 CL I, Zone 2, AEx ec IIC T4 Gc  
 T<sub>a</sub> = -50 °C to +70 °C  
 Type 4X; IP65

**Specific Conditions for Safe Use (X):**

1. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.
2. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class	Maximum surface temperature	Ambient temperature range	Process temperature range
T5	100 °C	-50 °C to +70 °C	-50 °C to +100 °C
T4	135 °C	-50 °C to +70 °C	-50 °C to +121 °C

**E6 Canada Explosionproof**

**Certificate** FM21CA0053X

**Standards** CAN/CSA-C22.2 No. 0-10:R2015, CAN/CSA-C22.2 No. 0.4-17:2017, CSA C22.2 No. 0.5-16:2016, C22.2 No. 25-17:2017, CSA-C22.2 No. 30:2020, CSA-C22.2 No. 94.2-15:2015, CAN/CSA-C22.2 No. 60079-0:2019, CAN/CSA-C22.2 No. 60079-1:2016, CAN/CSA C22.2 No. 60079-26:2016, CAN/CSA C22.2 No. 60079-31:2015, CSA C22.2 No. 60079-40:2020, CAN/CSA-C22.2 No. 61010-1:2015

**Markings** CL I, DIV 1, GP B, C, D, T5...T4; Ex db IIC T5...T4 Ga/Gb (-50 °C ≤ T<sub>a</sub> ≤ 75 °C); CL II, DIV 1, GP E, F, G; CL III, DIV 1, T5...T4; Ex tb IIIC T135 °C Db; Dual seal T5 (-50 °C ≤ T<sub>process</sub> ≤ 100 °C) or T4 (-50 °C ≤ T<sub>process</sub> ≤ 121 °C); TYPE 4X; Conduit seal not required

**Special Conditions for Safe Use (X):**

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between EPL Ga (process connection) and EPL Gb (all other parts of the equipment). The model code and certificate are to be consulted for details of the diaphragm material. During installation, maintenance, and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. Appropriate cable, glands need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows. Maximum ambient temperature is reduced by a ratio of 1:1.5 as process connection temperature increase beyond +85 °C.

Temperature class	Maximum surface temperature	Ambient temperature range	Process temperature range
T5	100 °C	-50 °C to +75 °C	-50 °C to +100 °C
T4	135 °C	-50 °C to +75 °C	-50 °C to +121 °C

### 16 Canada Intrinsic Safety, Increased Safety, Non Incendive (NI)

**Certificate** FM21CA0049X

**Standards** CSA-C22.2 No. 25:2017, CSA-C22.2 No. 94.2:2015, CSA-C22.2 No. 213:2017, CSA-C22.2 No. 60079-0:2019, CAN/CSA-C22.2 No. 60079-7:2018, CAN/CSA-C22.2 No. 60079-11:2014, CAN/CSA-C22.2 No. 61010-1:2012

**Markings** IS CL I, DIV 1, GP A, B, C and D; T4

Ex ia IIC T4 Ga

when connected in accordance with Rosemount drawing 04620-5025

NI CL I, DIV 2, GP A, B, C, D; T5...T4

Ex ec IIC T4 Gc

$T_a = -50\text{ °C to }+70\text{ °C}$

Type 4X; IP65

### Specific Conditions for Safe Use (X):

1. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.
2. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:


Temperature class	Maximum surface temperature	Ambient temperature range	Process temperature range
T5	100 °C	-50 °C to +70 °C	-50 °C to +100 °C
T4	135 °C	-50 °C to +70 °C	-50 °C to +121 °C

## Europe

### E1 ATEX Flameproof

**Certificate** DEKRA 20ATEX0103 X

**Standards** EN IEC 60079-0:2018; EN 60079-1:2014; EN 60079-7:2015+A1:2018; EN 60079-26:2015

**Markings**  II 1/2 G Ex db IIC T6...T4 Ga/Gb, II 1/2 G Ex db eb IIC T6...T4 Ga/Gb T4/T5 ( $-60\text{ °C} \leq T_a \leq +75\text{ °C}$ ), T6 ( $-60\text{ °C} \leq T_a \leq +70\text{ °C}$ )

**Table 4: Temperature Range**

Process connection temperature range (°C)	Ambient temperature range	Temperature class/maximum surface temperature
-60 to +70 °C	-60 to +70 °C	T6
-60 to +75 °C	-60 to +75 °C	T5
-60 to +120 °C		T4

**Special Conditions for Safe Use (X):**

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Category 1G (process connection) and Category 2G (all other parts of the equipment). The model code and data sheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.

**I1 ATEX Intrinsic Safety**

<b>Certificate</b>	DEKRA 20ATEX0112 X
<b>Standards</b>	EN IEC 60079-0 : 2018, EN 60079-11 : 2012
<b>Markings</b>	⊕ II 1 G Ex ia IIC T4 Ga (-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

**Table 5: Input Parameters**

Voltage U <sub>i</sub>	30 V
Current I <sub>i</sub>	200 mA
Power P <sub>i</sub>	1.0 W
Capacitance C <sub>i</sub>	11.7 nF
Inductance L <sub>i</sub>	5.9 μH

**Special Condition for Safe Use (X):**

1. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.
2. For use only with resistively limited IS barriers.

**N1 ATEX Increased Safety (Zone 2)**

<b>Certificate</b>	DEKRA 20ATEX0113 X
<b>Standards</b>	EN IEC 60079-0 : 2018, EN 60079-7 : 2015 + A1 : 2018
<b>Markings</b>	⊕ II 3 G Ex ec IIC T4 Gc (-40 °C ≤ T <sub>a</sub> ≤ +70 °C) Um = 42.4V

**Special Condition for Safe Use (X):**

1. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.
2. Ex ec equipment must be installed in a conduit or junction box completing or providing minimum IP54 per IEC 60079-0 and IEC 60529.

**ND ATEX Dust Ignition-proof**

<b>Certificate</b>	DEKRA 20ATEX0103 X
<b>Standards</b>	EN IEC 60079-0:2018, EN 60079-31:2014
<b>Markings</b>	⊕ II 2 D Ex tb IIIC T135 °C Db (-60 °C ≤ T <sub>a</sub> ≤ +75 °C)



Process connection temperature range [°C]	Ambient temperature range	Temperature class/maximum surface temperature
-60 °C to +120 °C	-60 °C to +75 °C	T135 °C

**Special Condition for Safe Use (X):**

None.

## International

**E7 IECEx Flameproof and Dust****Certificate** IECEx DEK 20.0061X**Standards** IEC 60079-0:2017; IEC 60079-1:2014; IEC 60079-7:2017 (Ed.5.1); IEC 60079-26:2014; IEC 60079-31:2013**Markings** Ex db IIC T6...T4 Ga/Gb, Ex db eb IIC T6...T4 Ga/Gb T4/T5(-60 °C ≤ T<sub>a</sub> ≤ +75 °C), T6 (-60 °C ≤ T<sub>a</sub> ≤ +70 °C) Ex tb IIIC T135 °C Db (-60 °C ≤ T<sub>a</sub> ≤ +75 °C)

Process connection temperature range (°C)	Ambient temperature range	Temperature class/maximum surface temperature
-60 to +70 °C	-60 to +70 °C	T6
-60 to +75 °C	-60 to +75 °C	T5
-60 to +120 °C		T4/ T135 °C

**Special Conditions for Safe Use (X):**

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Category 1 (process connection) and Category 2 (all other parts of the equipment). The model code and data sheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.

**I7 IECEx Intrinsic Safety****Certificate:** IECEx DEK 20.0065X**Standards:** EN IEC 60079-0 : 2018, IEC 60079-11 : 2012**Markings:** Ex ia IIC T4 Ga (-40 °C ≤ T<sub>a</sub> ≤ +70 °C)**Table 6: Input Parameters**

Voltage U <sub>i</sub>	30 V
Current I <sub>i</sub>	200 mA
Power P <sub>i</sub>	1.0 W
Capacitance C <sub>i</sub>	11.7 nF
Inductance L <sub>i</sub>	5.9 μH

**Special Condition for Safe Use (X):**

1. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.
2. For use only with resistively limited IS barriers.

**N7 IECEx Increased Safety (Zone 2)**

<b>Certificate:</b>	IECEx DEK 20.0065X
<b>Standards:</b>	EN IEC 60079-0 : 2018, IEC 60079-7 : 2015 + A1 : 2018
<b>Markings:</b>	Ex ec IIC T4 Gc (-40 °C ≤ T <sub>a</sub> ≤ +70 °C) Um = 42.4V

**Special Condition for Safe Use (X):**

1. The model 4600 transmitter with T1 option will not pass the 500 Vrms dielectric strength test. Refer to the installation instructions for details.
2. Ex ec equipment must be installed in a conduit or junction box completing or providing minimum IP54 per IEC 60079-0 and IEC 60529.

## Combinations

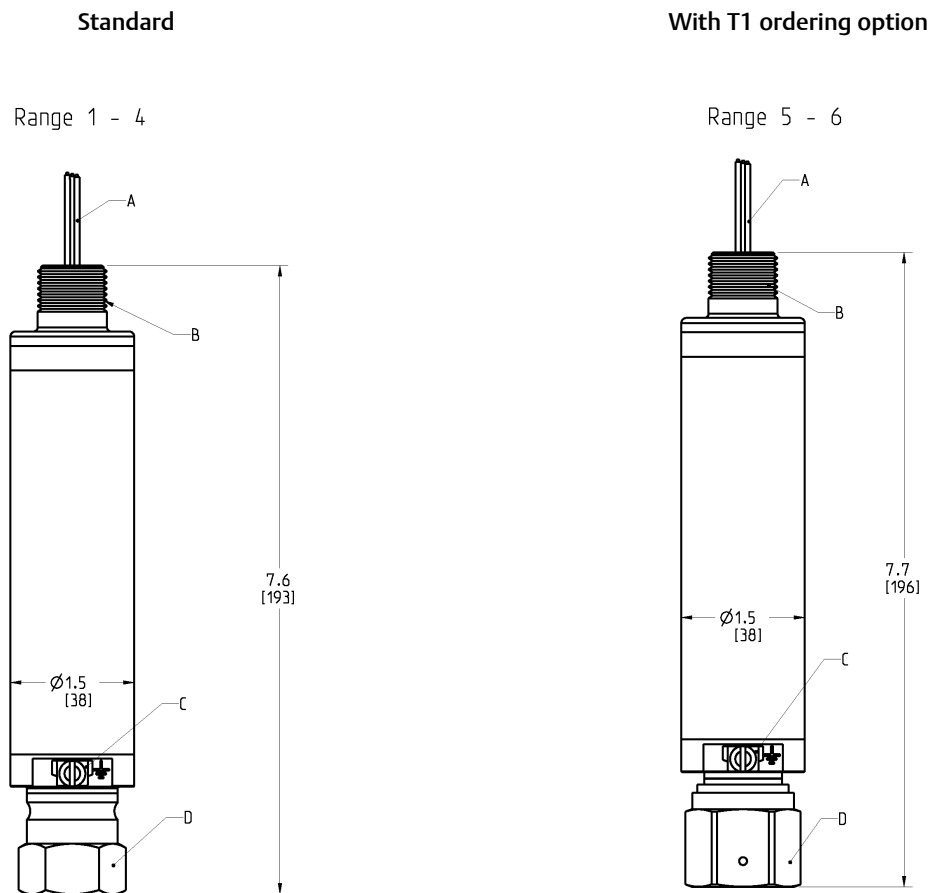
<b>K1</b>	Combination of E1, I1, and N1
<b>K5</b>	Combination of E5 and I5
<b>K6</b>	Combination of E6 and I6
<b>KA</b>	Combination of E1, I1, E6, and I6
<b>KB</b>	Combination of E5, E6, I5, and I6
<b>KC</b>	Combination of E1, E5, I1, and I5

## Dimensional drawings

**Figure 2: Range 1 - 6 Transmitter**

**Note**

½-in NPT 316ST process connection shown on range 1 - 4 transmitter. Coned and Threaded 316SST process connection show on range 5 -6 transmitter. T1 option (Transient Protection) does not change product dimensions.



Dimensions are in inches (millimeters).

- A. Ground
- B. Electrical connection ½-14 NPT
- C. Ground screw (ordering option D4 for Non-T1 option, and standard with T1 option)
- D. Process connection

For more information: [www.emerson.com](http://www.emerson.com)

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